NOVEMBER/DECEMBER 2023

CSSC33 — DESIGN AND ANALYSIS OF ALGORITHMS

Time : Three hours Maximum : 75 marks

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SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Algorithm.
2. Give a note on merge sort.
3. What is meant by space complexity.
4. Write a note on the subset paradigm.
5. Define Tree.
6. What is meant by Dynamic Programming?
7. Write the use of multistage Graphs.
8. Define BFS.
9. What is meant by Back tracking?
10. State – Cook's theorem.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Describe the selection method to find a element.

Or

(b) Illustrate the Binary search method.

12. (a) Explain the knapsack problem method.

Or

(b) Write about the Job sequence method.

13. (a) Describe the All-pair shortest paths problem.

Or

(b) Discuss the Travelling sales person problem.

14. (a) Explain the Inorder Binary Tree Traversal.

Or

(b) Write about the Hamiltonian cycles.

15. (a) Explain the flow shop scheduling problem.

Or

(b) Discuss about the AND/OR Graph decision problem.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Illustrate the Quick sort Algorithm.

17. Explain the Tree vertex splitting method with an Algorithm.

18. Describe the Optimal Binary search Trees.

19. Explain the 8-Queens problem with an Algorithm.

20. Describe the NP–hard code Generation problem.

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